

**To:** Jim Stefanoff, CH2M Hill  
**From:** Mary Kay Voytilla, EPA  
**Re:** Response to Q's and A's  
**Date:** July 12, 2001

Please find bullet point responses to some of the questions on my July 6, 2001 compilation of "Possible Questions Related to Bunker Hill Mine Water Management Project." Please note that below I have included two "new" questions and answers, and responses to two questions included in Dale Ralston's July 10, 2001 e-mail message. Please prepare responses to the other questions included in Dale's e-mail. Feel free to enhance the responses below with any thoughts of your own.

9. Why are EPA and IDEQ funding and operating the treatment plant?
  - Mine is privately owned, CTP owned by federal government
  - State pays 10% of treatment costs, feds pay 90%
  - Mine and CTP owned and operated by BLP until bankruptcy in 1992
  - NBHMC purchase mine (not plant) from BLP
  - Operation of CTP fell to Gulf/Pintlar (successors of BLP)
  - EPA assume CTP in November 1994 after bankruptcy of Gulf/Pintlar
10. Why didn't EPA sell NBHMC the CTP when they first expressed an interest?
  - NBHMC has expressed interest in the past in purchasing the CTP as well as other site properties
  - NBHMC was asked to provide an offer as well as financial information to support its ability to operate the CTP
  - As no such information was received, a serious offer was not made
11. Who will eventually own and operate the treatment plant, and be responsible for long-term O&M costs?
  - Before federal dollars can be spent, the Superfund law requires that the state agree to pay 10% of the costs of remedial action and to assume long term operation and maintenance for the remedy
  - If a private party were to purchase the CTP, they would be responsible for long term O&M
12. What role has the NBHMC played in the RI/FS and remedy selection process? What role will they play in remedy implementation?
  - EPA/IDEQ met with NBHMC early in the RI/FS scoping process (1998)
  - NBHMC has received draft documents for comment, and participated in technical meetings as the RI/FS developed (1998 - 2000)
  - NBHMC provided access to mine for sampling, and shared knowledge of mine and mine



operations

- Information has been shared with NBHMC on activities that must be coordinated with NBHMC in order to implement any of the mine water alternatives in the RI/FS
  - NBHMC has indicated that they will not express support or acceptance of any particular alternative until the end of the public comment period
  - NBHMC has been notified as a responsible party at the Bunker Hill Superfund site
  - EPA and DEQ believe that NBHMC has a role and responsibility in remedy implementation
  - Following ROD amendment, EPA/IDEQ will seek to negotiate a legal agreement with NBHMC on what its specific role will be in remedy implementation
13. The proposed remedial alternatives are expensive! Who will pay for these costs? How long will this go on?
- Current technology is not capable of stopping acid mine drainage production
  - Costs of collecting and treating AMD are expected to go on forever
  - Seek to reduce the amount of water that requires treatment by directing clean water from mine entry
  - Unless a private party assumes the CTP, the federal govt. will pay for 90% of the costs of improvement, and the State of Idaho will pay for 10% of the costs of improvements and all of the costs of long term operations and maintenance
14. Do any of the actions in the RI/FS or proposed plan prevent the mine from operating?
- No. None of the proposed actions would prevent the mine from operating
  - The NBHMC and the community have expressed a desire to keep the mine open and in operation
  - This was a tenet as the RI/FS was developed
15. What other contaminated water sources are treated at the CTP besides acid mine drainage from the Bunker Hill mine?
- Water from the following additional areas has been treated at the CTP: principal threat materials disposal cell in the industrial closure area, the toe drain from the industrial closure area landfill, two vehicle decontamination stations, runoff water collected from the CIA (temporarily until cap completed and only part of the year), occasional well development water
  - AMD is the largest source, most acidic, and highest concentration of dissolved metals
16. Could the CTP be used to treat other contaminated water sources from the site (e.g., CIA seepage) or within the Basin?
- Yes. It is assumed that any additional contaminated site water sources in need of treatment (e.g., CIA seeps, contaminated surface and ground water) would be treated at the CTP

- The treatment plant could be expanded (to some extent) to take other contaminated water sources in the Basin
  - While a maximum capacity has not been identified, physical space in which to expand the CTP would be a limiting factor
  - Treatability tests of any "new" water sources would likely need to be performed to verify that the plant would continue to be able to meet water quality standards and TMDLs
17. How do EPA and IDEQ intend to coordinate water quality improvement projects throughout the Box and Basin with this acid mine drainage treatment proposal?
- It is assumed that treatment within the Box would be accomplished at the CTP
  - The results of ongoing monitoring within the Box will be used to determine the need for further treatment of Box waters
  - The Box site-wide monitoring program is currently being evaluated and enhanced in order to ensure the collection of data that will allow us to make those calls (i.e., need for further treatment of Box waters)
  - The Box and Basin teams are working together on this monitoring program evaluation in order to collect data that will allow us to compare Box sources to Basin sources
  - This type of analysis will be used to set priorities for future project funding
18. Will the CTP require an NPDES permit? With what standards does the CTP have to comply?
- In the Superfund program, actions that occur as part of a cleanup do not need to obtain permits
  - They must, however, comply with the substantive requirements of the permit
  - The substantive requirements of the NPDES permit were determined to be the effluent limits and the monitoring requirements
  - CTP effluent limits based on Idaho water quality standards for Arsenic, Copper, Mercury, Selenium, Silver, Thallium, the TMDLs for Cadmium, Lead, and Zinc, and the federal water quality criteria for Iron, Manganese, and Aluminum
  - Monitoring will include effluent sampling, river flow, and toxicity testing
  - See Bunker Hill CTP Discharge Quality and Monitoring Plan
19. What is it going to cost to meet the TMDL limits for the CTP and when will these limits be achieved?
- Tri-media filters are proposed for the CTP to reduce suspended solids and achieve TMDLs
  - The cost of retrofitting the CTP with filters is app. \$3 million
  - Filters are also desired for their ability to cut sludge production by app. one half
  - Filters could be designed and installed in 8 - 12 months
  - TMDL will be met when filters go on-line

**JIM, PLEASE ADD THE FOLLOWING AS "NEW" QUESTIONS AFTER EXISTING #19**

NEW Will achieving the TMDL limits at the CTP cleanup the Coeur d'Alene River?

- No. The CTP is only one of several point source dischargers to the SFCDR. In addition, numerous non-point sources exist
- The TMDL is a water quality plan - each source needs to do its part
- Filters will reduce existing CTP discharges of Cd by 80%, Pb by 90%, and Zn by 75%
- One day discharge untreated AMD for zinc=1.4 years discharge from existing plant or 5.6 years after filters
- Meeting TMDL is not sig. effort for CTP - costs not exorbitant, not exotic technology, would want filters anyway
- If don't fix up CTP and risk untreated AMD entering river will be made much worse, e.g., metals load in untreated AMD alone exceeds current load in river at Pinehurst

NEW Are TMDLs appropriate cleanup goals?

- There is a long history of litigation and court-ordered schedules associated with the Coeur d'Alene Basin TMDL
- The Coeur d'Alene River is a large and significant resource with a history of active fisheries and clear impacts from mining
- The Cd' A Basin TMDL is a plan to achieve water quality standards and apportion responsibility among the various sources
- Attainment of the TMDL allocation for the CTP is achievable using current technology (tri-media filters) that is not considered to be significantly costly, and filters are desired anyway for their ability to cut sludge production.
- If don't fix up CTP (which is approaching 30 years old) and risk untreated AMD entering river will be made much worse, e.g., metals load in untreated AMD alone exceeds current load in river at Pinehurst

20. I understand that the State of Idaho plans to propose site specific criteria for lead and zinc for the SFCDR. When would this happen and how would it impact the TMDL allocations for the CTP as well as other sources in the SFCDR?

- We understand that the site specific criteria should be out for public in August or September
- Following public comment the criteria would be reviewed by DEQ's water quality board, passed by the Idaho legislature, and then forwarded to EPA for approval
- The earliest estimate for when EPA may see the criteria for approval is April 2002
- If approved, dischargers in the SFCDR, including the CTP, should be able to discharge water with higher concentrations of lead and zinc than under the current standards
- EPA and IDEQ would recalculate the TMDL based on the site specific criteria

21. I understand that EPA has recently released more stringent aquatic life criteria for cadmium. How does this impact effluent releases from the CTP?
- EPA revised and reissued (April 2001) its aquatic life criteria for cadmium
  - The new federal criteria are lower than before, and lower than the State's current water quality standard for cadmium
  - The State of Idaho has not adopted the new lower criteria, or made a determination regarding whether the new lower criteria are appropriate for the Coeur d'Alene River
  - Since NPDES permits are based on State water quality standards (not federal criteria), any permits issued would be based on the State water quality standards at the time of permit issuance. These permits would be updated to reflect any new standards adopted by the State upon their reissuance.
  - The CTP, however, is not subject to a permit and is part of a Superfund action that must achieve all ARARs (i.e., federal water quality criteria and State water quality standards)
  - Based on treatability testing results, average concentrations of cadmium in the CTP effluent (after filters) are expected to be below the new federal water quality criteria for cadmium
22. What are the human health and ecological concerns associated with exposure to untreated AMD? What are the benefits of the proposed actions in terms of human health and ecological risk reduction?
- EPA did a screening level risk assessment to compare levels of dissolved and suspended metals in untreated acid mine drainage to current water quality standards and criteria
  - For the SFCDR, these standards and criteria are designed to be protective of aquatic organisms and human recreational uses (fishing, boating, wading and swimming) where ingestion of large amounts of water is not expected
  - For the 12 identified contaminants of concern, concentrations of metals in untreated acid mine drainage exceed protective water quality standards by 4 - 2,600 times
  - While the proposed actions will reduce existing CTP discharges of Cd by 80%, Pb by 90%, and Zn by 75%, these actions alone will not address all of the ails of the Coeur d'Alene River (e.g., current populations of benthic organisms and fish are low in the SFCDR, and about 30 miles of river are unable to sustain reproducing fish populations)
  - EPA and IDEQ think that the bigger issue is what may occur if the CTP is not upgraded and maintained and untreated acid mine drainage is allowed to be discharged. For example, aquatic organisms are more sensitive than humans, and a prolonged release of untreated acid mine drainage into the SFCDR would result in an acutely toxic shock to the aquatic system, resulting in the death of fish and invertebrate species.
24. How do discharges from the Bunker Hill Mine compare to other mine's discharges?
- Bunker Hill discharges generally more acidic, higher metals concentration, and higher flow
  - Bunker ore has more sulfide content
  - Bunker mine bigger and mining take place closer to the surface

36. Have cleanup and flood control actions in Milo Creek resulted in an increase in infiltration to the Bunker Hill mine?
- Historical information dating back to the 1970's indicates that infiltration into the Bunker Hill mine through the main stem of Milo Creek has occurred in the past
  - It is possible that construction activities, e.g., stream bed excavation which could remove the accumulated fine sediment and metals precipitation layer, could increase the permeability of the stream channel and result in increased infiltration to the mine
  - In mine monitoring data collected by EPA in 1998 and 1999 was inconclusive as to the degree of any current infiltration
  - However, when compared to similar data collected in the mid-1980's, the 98/99 data indicates that flow volumes in those areas of the mine influenced by main stem Milo Creek area not significantly different
37. How soon would the proposed remedial actions start occurring? How long would they take to complete?
- Following issuance of a ROD amendment, EPA would enter into a contract with a firm to design the selected remedy
  - EPA and IDEQ would also amend the existing State Superfund Contract providing State assurances for 10% of the remedial action costs and long term O&M
  - Construction of the remedy components would take up to three years to complete
  - Surface and in-mine monitoring to determine if additional flow reduction measures or treatment plant capacity is needed would occur for up to 10 years
43. What is the status of EPA's consideration of variances for the draft discharge permits for mining companies in the Silver Valley?
- Hecla submitted a request for a variance for lead and zinc discharges in February 2001
  - The request is being reviewed by EPA and IDEQ to determine what if any additional information is needed to process the request
  - Because variances are relatively unusual, and because the supporting information required is detailed, the variance process is expected to take some time
  - An NPDES permit can be modified if a variance is approved
44. Will EPA consider site specific criteria in issuing discharge permits?
- EPA will not consider site specific criteria until they are formally approved
  - IDEQ is beginning a rulemaking process this summer to establish site specific criteria for the SFCDR
  - Once Idaho has completed its work, they will submit their new criteria to EPA for federal approval
  - This is expected sometime in the Spring of 2002
  - If these criteria are approved, NPDES permits will be modified accordingly

45. Do the SSC being proposed for lead and zinc apply to the entire SFCDR?
- A site specific study for cadmium, lead and zinc was completed by Hecla Mining Company and IDEQ for the eight-mile SFCDR stretch between Daisy Gulch and Canyon Creek
  - The study shows that the aquatic life in this portion of the SFCDR can tolerate greater concentrations of lead and zinc than Idaho's current water quality standards
  - Hecla and IDEQ are currently working to extrapolate the eight-mile stretch data to the entire SFCDR
  - It is our understanding that the site specific criteria proposed later this summer for public comment will apply to the entire SFCDR
46. What is the schedule for proposing and approving SSC? When is the earliest they could take effect? When would the TMDL for the SFCDR be revised based on any approved SSC? Any idea of how the SSC, if approved, would impact the TMDL?
- We understand that the site specific criteria should be out for public comment in August or September, 2001
  - Following public comment the criteria would be reviewed by DEQ's water quality board, passed by the Idaho legislature, and then forwarded to EPA for approval
  - The earliest estimate for when EPA may see the criteria for approval is April 2002
  - EPA and IDEQ would recalculate the TMDL based on the site specific criteria after formal approval. Permits would be updated based on the recalculation.
  - If site specific criteria are approved and the TMDL is recalculated, dischargers in the SFCDR, including the CTP, should be able to discharge water with higher concentrations of lead and zinc than under the current standards

**JIM, PLEASE ADD THE FOLLOWING AS A "NEW" QUESTION AFTER EXISTING #12**

DALE Does the NBHMC presently pay for treatment of AMD?

- Since 1995, over 30 letters have been issued to NBHMC documenting monthly and cumulative water treatment costs. No payment has ever been received from NBHMC.
- EPA and DEQ believe that NBHMC is responsible for the costs of treating mine drainage
- Following ROD amendment, EPA/IDEQ will seek to negotiate a legal agreement with NBHMC to settle past costs for treatment and define its future role in remedy implementation
- EPA and DEQ believe that it is important to define NBHMC's role before any further public funds are spent on improving the existing treatment system
- The extent of NBHMC's responsibility will include consideration of its financial capabilities

**JIM, PLEASE ADD THE FOLLOWING AS A "NEW" QUESTION SOMEWHERE THAT YOU THINK IS APPROPRIATE**

DALE Why should we spend so much money on a private mine when there are so many other pressing environmental problems in the Basin?

- As the owner and operator of the CTP, EPA has a responsibility for ensuring that the plant is maintained in good working order and is capable of meeting current water quality requirements
- In addition, if no other party is identified, the State of Idaho would assume responsibilities for the long term operation and maintenance of the CTP. EPA wants to turn over to the State an upgraded plant in good working order.
- The CTP is almost 30 years old has not been significantly upgraded.
- Failure of the CTP, which would result in untreated acid mine drainage being released to the SFCDR, would in fact be a pressing environmental problem. Untreated, acid mine drainage from the Bunker Hill mine would likely be the largest source of metals loading to the Coeur d'Alene River.
- For the 12 identified contaminants of concern, concentrations of metals in untreated acid mine drainage exceed protective water quality standards by 4 - 2,600 times
- A prolonged release of untreated acid mine drainage into the SFCDR would result in an acutely toxic shock to the aquatic system, resulting in the death of fish and invertebrate species.